

# ABSTRACT

The present invention intends to provide an industrially applicable diamond electrode and a diamond-coated silicon used in the electrode. A silicon substrate having a thickness of 500  $\mu\text{m}$  or less, at least partially coated with electrically conductive diamond is used as a diamond-coated silicon. In addition, an electrically conductive support substrate and the diamond-coated silicon is used as an electrode. The diamond-coated silicon is flexible and it can be adhered to the electrically conductive support substrate, and thereby a large area electrode and a three-dimensional electrode structure can be easily obtained.